1. How can NESDIS improve their services and data?

Data Specific:

- GOES imagery – make better use of the satellite by scheduling for full disc data during the "dark time" rather than focusing solely on the US coverage
- NOAA needs more collecting stations internationally or better access to data outside of the US (note: specific to ecosystems data and request for high resolution global AVHRR).
- Prefer to have station data in a global block – prefer not to get yearly updates if some data not updated

Data Discovery:

- It is difficult to find data. Need a 'data' button on the NOAA home page and on home pages of NOAA Offices, both to discover data available and to help contributors provide data to NOAA.
- For the more popular data sets and parameters there are too many options, e.g. there are dozens of SST data sets available – making it difficult for users to know which is best or most appropriate. Users need a guide to the type of data set (i.e. real-time, climatology, and retrospective) including a summary of the data and its limitations, version, and best uses.
- Need rules-based search for users to find data. Start with one data set, say SST, to build a 'rules based' system (see IRI)
- Provide access to other sources of data, throughout NOAA (intra-agency) and external to NOAA (interagency and internationally). Link to other data providers such as the NASA global change master directory.
- Real-time data only available on the day then gone until fully quality controlled – need to make intermediate data available sooner – even if not fully quality controlled.
- Archive so data is searchable for users and experts
- Offer a show room or exhibit space map room to 'show off' some data sets and how data are used.
- Catalog data sets in multiple ways to improve discovery (i.e. by name, keyword, originator, temporal and spatial resolution and extent), include a summary and links to metadata and peer-reviewed publications with

Data Quality

- Need versioning of data and metadata with tracking of what has changed and why
- Provide a short description for publications listings with data sets, link to library or other sources of peer-reviewed publications using data when possible.
- Data rating system based upon application
- User rating of data sets. Best is too subjective – allow for users to post feedback reviews on data sets – have a cleaner definition of best, most used, batting average of use
- Use news groups or other web lists to help users help themselves
- Need additional information on error characteristics of data sets
- A method to 'Rate this product' on web

Metadata

- Need better, more current and complete metadata with links to journal articles and peer reviews of data.
- Needs tools to help easily populate metadata files. Data contributors need an on-line guide and template to help them fill out necessary metadata when contributing data on-line.
- Is FGDC metadata standard implementation successful or do we need something simpler?

DISCUSSION SUMMARY June 11-12, 2003
Academic I Boulder, CO
NESDIS Data Users' Workshop

Services

- What is public, must work – first impressions are important – once a search or service fails folks often do not come back
- Data Centers could use a library index system
- User support is difficult and expensive – so do it right up front
- Make it easy to find out how to contact a person. Every data page should have a contact.
- Have a live person on web to answer questions and help find things. For questions, it is OK if they get back to you within 3 hours or within 24 hours. This costs money, so NOAA needs to commit to supporting data users.
- On line course on searching data centers – expand use of interns, summer visits
- Provide the option of user logins and enable tracking of activity so a user can return to a site and find / jump to where they left the web or review their activity.
- Have data base of questions and responses for users to look up – provide e-mail support (note: Answers@NOAA discussed. New service users unaware of.)
- To support novice users, have a method for choosing the level of experience they have and then have dedicated web pages for the varying degrees of user experience
- THREADS protocol is very useful to IRI, project – digital library geo-reference project – how to handle time?

2. How can NESDIS Centers best provide for customer feedback?

- Two-way communication is important.
- Customer surveys are more difficult to do since the paperwork reduction act, but NOAA needs to find ways to gather user feedback, including an approved, reusable, web-based customer survey.
- For feedback, make it really easy with just a single question "Were you satisfied with this process? Yes or No"– a bit more in your face but make it very simple – put it by where you order or download the data so it can't be missed. If feedback is negative then pop up another window to query what the problem was and gather more specifics.
- Survey all, not just those who are successful in purchasing data
- Have a place on the web site for customer comments and suggestions – web forum
- Communication – continuing dialog – data providers workshop – need a NOAA federation or consortium so data center folks can share ongoing developments and not re-invent the wheel
- Host yearly focused data user workshops at meetings of opportunity such as AGU, AMS, and Oceans.

3. Technology of the future -- How can it help?

Assume that speed, storage, and the pipeline are all vastly increased:

- Interoperability and integration across data disciplines and data sources is the number one requirement. NOAA should be proactive in data, metadata, and communications standards development.
- Computer to computer communications for seamless delivery of data and information.
- Provide map-based searches to display what data are available and provide temporal, geographic, keyword, data type and data use searches.
- On map searches, user should be able to click on a pixel or location and get information on all data available for that location – whether model output, grid values, or data from satellite, ship, or ground based platforms.
- Integrate the search to with the display, access, and download / purchase so users don't need to jump between systems – including access to non-NOAA data.
- Much higher resolution and better global coverage (both for ground and remotely sensed data)
- Provide access to literature searches to find what data sets others have used
- Standards development is critical – files, metadata, communication, data discovery
- Natural language queries to machine and back to natural language
- Improved processing, documentation, and delivery should allow seamless access to terabytes of data and related documentation from real-time, to intermediary processed data, to archived high-quality, to climatologies.

4. New data acquisitions: What data should NESDIS archive?

- Solar radiation data
- Physical properties of water column
- Hourly or better GOES full disk scans
- Better resolution and global coverage of environmental data, specifically AVHRR, reflectivity, soils, and plant coverage.
- More models (global and regional) and related data.

5. New Products and Services

- Make it easier for data providers to submit data and metadata to data centers
- Natural language search and discovery with options for display
- Spectrums of modes for data access (from real-time to full archive)
- Better support for outputting data in user specified formats

6. Other Issues

- Better linkage between NOAA and Partners
- What is public MUST work and work reliably
- Start process with improved metadata content and quality, then implement "google-like" search of metadata for key words.
- Data Centers should remember the basics; data quality is job #1, quality metadata is required for data usage, data archive is essential to ensure longevity, and data access should be seamless – at least across NESDIS.